

MOTION DYNAMICS Group

Environmental Energy Research and Technology

>>>>>MDG TEC. PROJECTS >>

Introducing the...

AC BATTERY “Power Plant” – by using the

World’s most efficient stationary battery the new Hybrid Lithium ion Pb Gel Battery chemistry (min. 91% efficiency) – there is NO damaging sulfation / w. fast recharge, NO hazmat restrictions, spare batteries can be stored indefinitely. Special optional light weight Nickel construction for increased energy density EV - electric vehicle power applications. The combined multi-function design outputs 100% pure wave AC POWER without using ANY prior art power inverters.

Facilitates the profitable purchase and storage of off-peak (nighttime) electric power that is sold the next day during peak demand periods at 150 – 400% higher *retail cost* when prices are best – stores generated or off-peak power purchased at wholesale cost. The breakthrough design dramatically assists or renders obsolete through direct grid recharge, many costly existing prior-art (higher cost) peak generation technologies like pumped water storage and gas turbine peaking power plants’ for lower total initial plus operating and fuel costs per kW. Provides high efficiency at lower expense, plus NO: fuel handling, storage. On site fossil fuel use is not required, although - with MDG High efficiency fossil or renewable energy back-up power generation options these high reliability power distribution module systems are totally self-sufficient. If you can depend on "someone else’s" power for your daily power supply availability it’s a virtually effortless system to operate, for providing a virtually 100% guaranteed, plus a high quality conditioned electric power supply. Systems are much more cost effective, especially when long-term deep discount wholesale off peak power supplies are available. Exclusive off-peak supply contracts are able to be established.

The installed distributed generation AC Battery network is able to supply instantly “dispatchable” peak electric power for combined output capacities equal to those of (multiple) atomic power plant capacities.

The AC Battery system is fully automated, low-cost and is the most sophisticated and technically comprehensive solution available to efficiently reverse the world’s insufficient utility peak power demand electric capacity shortfall problem. Cost is \$650 for first hour and \$200 per kW/hour for each additional “dispatchable” kilowatt/hour of output – for multi-megawatt capacities – i.e. wholesale cost: 5 additional output hours of

1 kilowatt hour each hour is \$1,000.00. It is hassle free w. NO fossil fuel or prior art costly energy conversion device expenses - just send / store / and have “guaranteed” dispatched efficient “electron” fuel!

AC Battery supplied power loads can be run during peak demand w/o using any conventional peak generation and without using ANY transmission resources to produce enormous needed systemwide peak demand load reduction, plus extra built-in spinning reserve capacity and “Green” power production potential (plus extra storage potential) allowing existing clean power generators to output more needed power (during the off-peak hours) to ease or virtually eliminate the requirement to build prior-art “pumped” storage, new conventional polluting fossil fuel or other expensive new power generation plants and/or new higher “peak” capacity transmission line systems.

The AC Battery “hybrid” upgrade “network” system provides the unique ability for existing wind machines to output three times more power (or more) by storing either the wind machine’s low value off peak and intermittent outputs &/or surplus energy produced from ANY other generation source for covering the critical daily PEAK power output requirements. Compared to wind power this is accomplished at 300% less cost than constructing additional new wind power generation systems. The new MDG “hybrid” upgrade will allow maximum (rated) plate power output (about 300% or much more capacity) during the critical daily PEAK DEMAND hours from any prior-art wind farm system. By having the option to accumulate the lowest possible cost surplus / nighttime off-peak conventional OR conceivably even *low cost* excess nuclear power – the new upgrade retrofit system is able to provide maximum output -- even if the wind doesn’t blow - to operate in super efficient maximum daily output hybrid –mode.

All renewable energy systems can be dramatically upgraded to have stored energy w. “dispatchable” power capabilities since the AC BATTERY also functions as a grid intertie and substation upgrade, DC to AC pure wave inverter-less power converter, automatic disconnect, power conditioner, and wireless control plus status monitoring center for sending and receiving excess power. Plus “intermittent” systems are able to output more than ‘average’ power due to quicker low end threshold grid connect – plus MORE OUTPUT at times when the systems normally don’t or can’t produce any usable power. New or existing power systems both can establish much more peak power capacity by using this same “universal” power distribution upgrade system.

NOW powered by MDG equipment, , hotels, municipalities, supermarkets even hospitals (even w.o. top quality wind site resource potential) can be more efficiently operated during the critical peak demand period - far away from the wind turbine supplying them, plus, in the alternative, the load site can also benefit from low cost nighttime power being powered by purchased during any of the off peak operating hours . By upgrading prior-art intermittent RE (renewable energy) power sources like Wind AND Solar PV with MDG advanced tech. hardware, many existing or new systems can output unparalleled new maximum capacities of high quality, premium value peak demand power – making an improved ROI for any project developers. When combined with a desirable certified RE component legislation / certification status (like power security infrastructure rebate) unparalleled peak demand load reductions plus “guaranteed” power reliability and new capacity can be deployed to enhance any area. This upgrade technology bridges the “gap”

that holds back the deployment of current RE power systems. This technology makes possible the new development of high efficiency, economically successful “hybrid” RE infrastructure project(s) that - without its’ abilities, would be either marginally economical or totally unprofitable to plan or execute.

Utilities, grid operators (or commercial industry) can use the AC Battery to totally eliminate all prior-art system related blackouts and prevent voltage “sag” problems to establish the “hardened” conditioned power distribution system of-the-future to provide the ultimate “dispatchable” demand response system where conceivably every utility customer’s AC Battery equipped location can be signaled to output stored (or on site generator produced!) electric power when needed (to supply and stabilize any grid). Plus many unparalleled other benefits are gained by installing the AC Battery Tec. – like fuel savings and T&D upgrade cost avoidance, plus total immunity to the Sun’s problematic increasing solar flare/CME (coronal mass ejections) – more of which have been recorded, although ‘missing’ earth, in the last 6 months than in all previous recorded history. The grid damages from these damaging emissions activity can now be nullified to prevent major outages – like the ones that took out large parts of Canada in 1984 plus effect elimination of *the alleged* brain/prostate xancer and leukemia causing EMF emission pollution...

The deployed modular units are able to supply essential “reactive” power to automatically start heavy intermittent electric motor and other loads (without utility having to over-generate every second of the day, to provide this critical “reserve” of reactive power). In addition the MDG AC BATTERY system will also instantly grid inter-tie ANY type power generation equipment to the utility grid (for permanent power increase, remote control or extended operation during emergencies) for perfect phase angle synchronization plus supply “automatic” outage disconnect protection. Since the existing prior art national grid is a “unified” grid; if one sub part of a region “goes down” the whole system in that region MUST be shut down - due to insufficient capacity. The AC Battery - Distribution System upgrade allows perfectly synchronized micro grid area’s operations since there will always be instant spinning-reserve power “capacity” in reserve to supply – this guarantees the utmost minimal area of outage is possible; and instant “perfectly synchronized” re-connection of the segregated area to the unified grid is easy and possible at any time... In reality, with the new levels of distributed capacity provided by the advanced MDG AC Battery network, the past conventional normal insufficient daily peak demand “capacity related” major regional and even area blackouts truly, because of the MDG system’s capabilities, can and “will” no longer occur on MDG system equipped transmission and distribution power line systems.

Ownership/operation of this ultra high efficiency power distribution hardware allows any utility or non-utility operator to store and supply the lowest cost peak power in any region – and to basically eat the proverbial premium retail price peak demand “lunch” of existing incumbent utility operations. Due to the dispatchable power nature abundantly available off peak power can be acquired for the cheapest (wholesale) cost and sold for the highest available (retail) price or, supply “discount” retail cost power supplies (for long-term PPA [*power purchase agreement*] contracts) in any area – providing higher reliability and equally competing with, or undercutting, every other competitor’s price. It is possible to do this without the need for ANY direct generation expense and with the

absolute minimum O&M [*operation and maintaince*] expense, plus with virtually NO workers' labor costs.

Excess power capacity from nuclear and the cleanest fossil fuel power plants can now be sent during the nightly off peak hours, and stored for powering peak demand loads WITHOUT using any additional scheduled daytime peak demand transmission line resources to establish greater power reliability. This offsets the need for excessive high pollution peak power production from more fossil fuel power plants – now needed to “back-up” the capacity from intermittent production sources like undependable power from wind and solar sites.

The totally automated AC Battery power plant network can be controlled and monitored by secure “wireless” PC (personal computer) remote control by one or two technicians. Large fast charge EV fleets can also NOW be charged without otherwise causing major grid instability and capacity related blackouts. A maintenance plan for electronics and scheduled battery maintenance, upgrade, repair, replacement, and service by MDG is available so all costs can be accurately projected and managed – for long term 25 (+) year operation.

Power line M.A.G. (Magnetic Amplification Genset) – This breakthrough solid-state stand alone device attaches in series to any transmission or distribution line transformer or substation...by harnessing the waste EMF flows (the alleged cancer causing component) from power lines, it cancels the problematic heat loss and harmonic causing EMFs . Additionally, the hardware has the unique ability to conserve any part or all of the available U.S. \$500 Billion a year in worldwide electric power line losses. It efficiently harvests 4% of the total power line's real time capacity losses while increasing power quality and protecting system against the Sun's worsening CMEs which caused large Canadian outages in 1985 .

This new source of AC real-time electric power provides peak demand load reduction, power quality increases and more dependable power outputs than wind at lower than 1/3rd the cost of the most efficient Wind Power generation equipment – therefore making this the MOST cost effective “Green” energy power generation / conservation equipment available to the worldwide industry today. In addition, when equipped ...the dangerous power line EMF radiation emissions are canceled so they do not harm adults, children and, or natural ecosystems. Depending on the deals the developer/operator can expect to pocket about one half of the power output dollars, by installing this equipment on existing electric power transmission lines and distribution line systems without needing any additional generators or fossil/atomic fuel, for maximum profit potential. Plus operators have the unique ability to market or use the additional 100% “green” power, or produced hydrogen fuel supplies, at premium prices. As a strategic option, the above described AC BATTERY module(s) can absorb all of the low value power outputs during the off peak periods – storing them for guaranteed high \$\$\$ value peak demand “dispatch” during the critical daily peak demand period.

The combined capacity upgrade technology and concept can supply 7-11% of the TOTAL SYSTEM's DAILY PEAK DEMAND requirements for AC ELECTRIC

POWER loads from the MDG systems – with the unique opportunity to market power at “retail” (instead of normal wholesale) prices – due to the unique automated receive and instant “dispatch” ability. The large and smaller modular MDG back-up power systems can be installed in residential / commercial buildings / institutional & industrial facilities / MAC machines / internet server & computer power supplies, traffic signals, or at cash registers to insure against outage related commercial losses and permanently optimize every power distribution system. In addition the possibility exists to later upgrade to facilitate low cost per minute power line telecommunications (telephone and for ultra high speed real-time audio/video downloads) for even more income potential.

Using this quick and easy MDG solid-state waste energy harvesting solution Any capacity or energy supply increase project can be executed at a guaranteed fraction of conventional wind energy or nuclear power plant projects’ cost. The output power needs to be either used or stored. MDG can provide the AC electric storage & dispatch technology or the unique discount power electric utility service to produce hydrogen fuel.

Satisfying your needs are our concern...

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